

REMARKS

Applicants request favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

Claims 1-8 remain pending in this application, with Claims 1 and 8 being independent. By this Amendment, Applicants have amended the specification and Claims 1, 2, and 8. No new matter has been added.

Claims 1-5, 7, and 8 stand rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,961,501 (Matsuura, et al.). Claim 6 stands rejected under 35 U.S.C. § 103 as being unpatentable over Matsuura, et al. Claims 1-8 stand rejected under 35 U.S.C. § 103 as being unpatentable over European Patent No. 1 329 758 (Takiguchi, et al.) in view of U.S. Patent Publication No. 2002/0135863 (Fukshima, et al.). Applicants traverse these rejections.

As recited in independent Claim 1, Applicants' invention is directed to an optical device including (i) an optical element formed with a plurality of pillar-shaped members and a pair of support members and (ii) means for applying force to the pillar-shaped members by way of the support members. The support members are arranged perpendicularly relative to the direction of arrangement of the pillar-shaped members so as to sandwich the pillar-shaped members. Force is applied to the pillar-shaped members in directions perpendicular to the direction of arrangement of the pillar-shaped members, so as to expand and compress the pillar-shaped members.

Independent Claim 8 is directed to a method of modulating an optical characteristic of an optical element formed with a plurality of pillar-shaped members and support members. The method includes features similar to those recited in independent Claim 1.

With the support members sandwiching the pillar-shaped members, the application force achieves both expansion and compression of the pillar-shaped members.

Matsuura, et al. is directed to a photonic device incorporating a piezoelectric element. The Office Action cites element 31 as corresponding to pillar-shaped members of the present invention. While that patent may describe pillar-shaped members and the use of a piezoelectric element to provide a force upon the photonic device, the pillar-shaped member is not sandwiched between support members. With the present invention, the support members sandwiching the pillar-shaped members are acted on by a force so as to alternately expand and compress the pillar-shaped members sandwiched therebetween.

As can be seen by the drawings of Matsuura, et al., pillar-shaped member 31 is only attached to a substrate 33 at one end thereof. Thus, without being sandwiched between support members, there is no suggestion of both expanding and compressing the pillar-shaped members in the manner claimed.

Takiguchi, et al. is directed to an optical device using a photonic crystal. The Office Action acknowledges that Takiguchi, et al. does not describe the use of pillar-shaped members; however, the Office Action relies on this application as describing the application of pressure to a photonic crystal. While a piezoelectric element may apply pressure to a photonic crystal, that patent application merely discusses the application or pressure or reduction of pressure to the photonic crystal (see paragraphs 23 and 36). That

application does not describe a system for expanding a photonic crystal, as recited in the independent claims.

Fukshima, et al. is merely cited in the Office Action teaching that photonic crystals may be provided in a pillar-shaped form. That application does not remedy the deficiencies discussed above with respect to Matsuura, et al. and Takiguchi, et al.

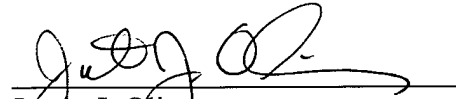
Accordingly, Applicants submit that Matsuura, et al., Fukshima, et al. and Takiguchi, et al., taken alone or in combination, fail to disclose or suggest at least the features of applying force to pillar-shaped members by way of support members sandwiching those pillar-shaped members so as to expand and compress the pillar-shaped members, as generally recited in independent Claims 1 and 8.

The remaining claims in this application are dependent claims which depend from the above-described independent claims. The dependent claims are believed allowable by virtue of this dependency, and for reciting other patentable features of the invention. Favorable and independent reconsideration of the dependent claims are requested.

For the foregoing reasons, Applicants request withdrawal of the rejections under 35 U.S.C. §§102 and 103, and allowance of this application.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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